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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Nagesh Sonti

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EXAMINER

KESSLER, CHRISTOPHER S

ART UNIT

PAPER NUMBER

1742

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/802,141	Applicant(s) SONTI ET AL.	
	Examiner Christopher Kessler	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-18, 33, 34, 36, and 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,20,22-35,37-39 and 41-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It does not identify the citizenship of each inventor.

Status of Claims

2. Responsive to the amendment filed 24 May 2007, Claims 20, 22-32, 37, 41, 43 and 44 are amended, claim 21 is cancelled and claim 47 is added. Claims 19, 20, 22-35, 37-39, and 41-47 are currently under examination.

Status of Previous Rejections

3. The prior art rejections based on Amateau and Cole and Sonti and Cole are maintained. The rejections under 35 U.S.C. 112 have been obviated by amendment of the specification to include those features not disclosed.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 19, 20 and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amateau in view of Cole.

With regard to claims 19, 20, and 22-30, Amateau and Cole are applied to the claims as stated previously in the Office Action mailed 27 February 2007.

6. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amateau in view of Cole.

Amateau and Cole are applied to the claim as stated previously. Amateau in view of Cole does not teach wherein the root/fillet region of the gear teeth are compacted with a rolling die having a tip radius from about 0.014 to about 0.018 inches.

Cole teaches that in compacting the gear, different degrees of compaction would result from different profiles of the die (see col. 4). Thus, the rolling die tip radius is a results-effective variable affecting the deformation of the gear blank. Amateau further teaches that the degree of deformation is important in the process (see cols. 1-2). It would have been obvious to one of ordinary skill in the art to optimize the profile of the rolling die, in order to attain the desired deformation in the gear, as taught by Cole (cited above).

7. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amateau in view of Cole, in further view of U.S. Patent 4,972,735 issued to Torii et al. (hereinafter "Torii").

Amateau and Cole are applied to the claims as stated previously. Amateau and Cole do not specifically teach a method of making an intersecting axis gear, wherein the intersecting axis gear includes at least one of a straight bevel gear, a spiral bevel gear, a hypoid gear, a worm gear, and a worm-wheel gear. Cole does teach wherein the powder metal gear blanks are ultimately used for power transmission components (see col. 1). However, it is well known in the art that power transmission gears often include intersecting axis gears such as those claimed, and it would have been obvious to one of ordinary skill in the art that power transmission gears include intersecting axis gears such as those claimed.

For example, Torii teaches a wrist assembly for an industrial robot (see Abstract). Torii teaches wherein the wrist assembly includes power transmission mechanism (see Abstract). Torii further teaches wherein the power transmission mechanism includes a hypoid gear (see Abstract, Figure 2, Col. 2, or claim 2, for example).

It would have been obvious to one of ordinary skill in the art at time of invention to substitute a powder metal gear blank as taught by Cole for the hobbled gear blank disclosed in Amateau, in order to tailor the steel composition to particular applications, as taught by Cole (see col. 1, line 63-col. 2, line 41), and to use the method to manufacture the hypoid gear of Torii in order to provide a gear for making an improved wrist assembly capable of obtaining a desired reduction gear ratio while decreasing the number of gears needed for transmitting power from the motor to the second wrist portion and the third wrist portion, as taught by Torii (see col. 2).

8. Claims 35, 37-39 and 41-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonti in view of Cole.

With regard to claims 19-32, Sonti and Cole are applied to the claims as stated previously in the Office Action mailed 27 February 2007.

Response to Arguments

9. Applicant's arguments filed 24 May 2007 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The Examiner agrees, for example, that the Amateau reference does not teach a powder metal workpiece, and this was stated clearly in the Office Action mailed 27 February 2007. In response to Applicant's argument that neither Cole nor Amateau teaches "rolling the gear teeth surfaces of the powder metal workpiece to a desired outer peripheral profile shape," Amateau in view of Cole is applied to the claims as stated in the Office Action mailed 27 February 2007. Applicant has admitted, for example, that Amateau teaches "accurate contact surfaces using controlled deformation net shape finishing techniques" on p. 26 of the Remarks filed 24 May 2007.

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In response to applicant's argument that Cole teaches away from Applicant's invention, Cole teaches a range within the range claimed by Applicant, as stated in the Office Action mailed 27 February 2007. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Since Cole explicitly teaches a range lying completely inside of the range claimed by Applicant, Cole does not teach away from the invention. Applicant is further directed to MPEP 2144.05.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references is quite clearly stated in the Office Action mailed 27 February 2007, and the prior art is cited in said Office Action.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Kessler whose telephone number is (571) 272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

csk


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